then be converted into nitric acid by Ostwald's electrolytic process. A *résumé* of the recent work on the electrometallurgy of iron and steel was given by Mr. F. A. Fitzgerald. Prof. Taussig read important papers on large electric furnaces, and on the electrolysis of sodium chloride, in which the recent developments in the Castner-Kellner process were reviewed. A recommendation for national and international conservation of water-power was introduced by Mr. E. R. Taylor, in which the author deprecated the failure to employ the waste power of rivers and streams. The combination of nitric oxide and oxygen was shown by Dr. M. Bodenstein to consist of a trimolecular reaction. M. A. Coppadoro described a process for the simultaneous production of hydrochloric and sulphuric acids, in which electrolytic chlorine was caused to interact with sulphurous acid. The question of the amount of chemical work produced by light was discussed by Dr. F. Weigert, who by examination of the photochemical change of anthracene into dianthracene concluded that nearly 5 per cent. of the total amount of absorbed light was converted into work. M. Malfitano, in a paper on the constitution of colloids, described the use of celluloid membranes, which permit the passage of electrolytes, but remain impermeable to colloids. The mechanism of the absorption of hydrogen by carbon at low temperatures was shown by Dr. J. W. McBain to depend entirely upon condensation of the hydrogen upon the surface of the carbon.

THE SUPPLY OF SECONDARY EDUCATION IN ENGLAND AND ELSEWHERE.

IN their report, published in 1895, the Secondary Education Commissioners, when discussing the amount of secondary education required for the whole country, stated:—

"After the most careful consideration we have been forced to the conclusion that the problem contains so many indeterminate elements that any attempt at a solution applicable to the whole country would necessarily be misleading."

The Schools Inquiry Commissioners of 1868, however, had no such hesitation, and light-heartedly estimated requirements at 16 per 1000 of the population for boys in towns, of whom one-half would be third-grade pupils.

Circumstances have changed since 1895. A new Education Act has been in operation for six years; a list of recognised schools has been prepared and issued; surveys of their districts have been instituted by many educational authorities. These facts give warrant for making an approximation to the result. Any such approximation must be subject to errors; in some cases it is well-nigh impossible to obtain information, and the difficulty of standardisation is ever present.

Presuming that the reader is acquainted with, and can make allowance for, disturbing influences, we will place before him material which will enable him to answer three questions, and will throw light incidentally on others. These three questions are:—

(1) How many of our population receive a secondary education?

(2) What proportion continue their education after the age of sixteen as all-day scholars?

(3) How do we compare in these respects with the foreigner?

The latest returns concerning higher elementary education in England give the number of pupils as:—

Boys	8035 ...	Girls ...	6178
Average attendance	94·3 per cent. ...		92·4 per cent.

These pupils correspond to Bürgerschüler, and represent those who, under more favourable conditions, would receive secondary education. In Germany the Bürgerschule exists in many places on sufferance; the local authority wishes to have the whole elementary education under its control, and maintains a Bürgerschule as a means of checking the establishment of private schools. In Great Britain we have encouraged the private school, and have thus only this small pittance of higher elementary pupils to put forward. We shall discover our missing Bürgerschüler later.

The number of pupil-teachers and pupils in classes preparing for pupil-teachership, or its equivalent, was given in 1906–7 as:—

	Boys	Girls
Preparatory classes	1,077	5,473
Pupil-teachers (*a*)	2,771	10,735
Pupil-teachers (*b*)	2,468	8,550
Total	5,239	19,285
Training college students ...	2,663	5,645

In this same year the secondary schools under the Board account for 62,712 boys and 50,877 girls, *i.e.* five boys to four girls nearly, classed as follows:—

	Boys	Girls
Preparatory classes ...	18,214	... 13.993
Age 12–13	12,521 (4,011) ...	10,505 (1,433)
Age 13–14	9,812 (3,179) ...	9,180 (1,445)
Age 14–15	5,248 (3,377) ...	6,673 (1,276)
Age 15–16	2,551 (1,806) ...	3,052 (637)
Over 16	1,993	... 2,683

where the numbers in brackets refer to those taking special courses.

If, for the moment, we class pupil-teachers as secondary scholars, these figures show that secondary education for a girl too frequently means preparation for the teaching profession. If we analyse our table we find that for every

100 boys	100 girls	age 12–13
there were		
78·5	89·0	age 13–14
52·2	66·6	age 14–15
26·3	30·9	age 15–16
12·0	22·5	over 16

who were taking an approved course. That is, only about one boy in four who begins a course of secondary education ever remains to finish it. Our national view of secondary education is that it is simply a veneer of respectability which has no bearing on the capacity of the individual or the future of the nation. This statement of the national conception of education is unjust to some local areas. Let us consider London, the State-aided schools of Scotland, and Wales. The corresponding figures read:—

	London		Scotland		Wales	
Age	Boys	Girls	Boys	Girls	Boys	Girls
12–13 ...	100 ...	100 ...	100 ...	100 ...	100 ...	100
13–14 ...	123 ...	125 ...	149·6 ...	148·5 ...	71·5 ...	77·3
14–15 ...	114 ...	117 ...	184·3 ...	186·7 ...	47·9 ...	54·6
15–16 ...	69·5 ...	75·6 ...	163·4 ..	174·2 ...	29·2 ...	26·1
16–17 ...	35·2 ...	45 ...	106·6 ...	135·4 ...	14·7 ...	13·6
17–18 ...	16 ...	26 ...	48 ...	90 ...	— ...	—
18–19 ...	6·4 ...	7·5 ...	17·7 ...	46·8 ...	— ...	—

After her sacrifices for education, no one will accuse Wales of indifference. Yet her standard is still far from satisfactory. London is showing that she appreciates the value of a course of secondary education. What about Scotland? Explain that the Scotch parent is satisfied with the primary school, and keeps his children there until thirteen or fourteen years of age, and you give deserved praise to the elementary school. Explain that the lower age of entrance to the Scotch universities induces a parent to give his son a full secondary education so that he may see, if he does not gather, the prizes that lie beyond, and you compliment the foresight of the nation. Allege that the Scot does not succeed in life and you will be laughed to scorn. Protest that his success is not due to superior insight or fertile imagination or sporting enterprise, and you only accentuate the value of steady, disciplined intelligence. The German has this virtue, and so has the Scot. If you wish to know where the Scot gained it, remember the traditions of the country and study closely the middle column.

The list of secondary schools recognised as efficient for 1907 (Cd. 4374) accounts for 132,849 children, classed thus:—

	Under 12	12 to 16	Over 16
Boys	16,084	49,829	5,478
Girls	12,724	40,165	8,669

The total number of pupil-teachers enrolled at these schools is 9869, and the total number of pupil-teachers noted as at secondary schools or pupil-teacher centres is 4745 boys and 15,803 girls.

Thus in 1907, 89,994 pupils out of 132,849 (67·74 per cent.)
in 1906, 76,728 pupils out of 115,594 (66·38 per cent.)
in 1905, 53,309 pupils out of 85,358 (62·45 per cent.)

were taking an approved course. The rise in numbers and percentages is satisfactory, as it indicates the approach of a time when the secondary school will have a complete secondary character, and, when this is attained, we shall have a rise in standard of performance.

If we compare the schools discussed in Prof. Sadler's county reports (of date 1904 and 1905) with the particulars given in the Blue-book for 1908 about these same schools, we find the following results:—

Boys	Under 12	Between 12 and 16	Over 16
Reports	997	4174	374
Blue-book	1127	4478	417
Increase	13 per cent.	7·3 per cent.	11·5 per cent.
Girls			
Reports	698	2049	406
Blue-book	752	2494	521
Increase	8 per cent.	21·7 per cent.	28·3 per cent.

Here again a welcome improvement is recorded, and the more welcome because it shows a large increase among girls. It is interesting to note that whilst we are debating what to do with children under five, the question is being debated in Germany whether school attendance might not be postponed until seven, because, among other things, the German mother has received such a good school training that she is able to give efficient elementary education in the home up to the age of seven.

Secondary schools for boys may be divided into four classes, according as they are, or are not, recognised by the Board of Education or represented at the Headmasters' Conference.

The classes are:—

(A) Recognised schools which are represented.
(B) Recognised schools which are not represented.
(C) Non-recognised schools which are represented.
(D) Non-recognised schools which are not represented.

The last two, which trouble the calculator, may be classed as "proud but probably efficient" and "mean and probably inefficient." With a satisfactory system of inspection, as is being evolved, these harsh epithets will come more and more to be deserved.

In class A, of the schools which take pupils between eight and nineteen there is one pupil under twelve for every four between twelve and sixteen and for every one over sixteen. This proportion is nearly exact, the error being slightly in favour of the oldest and against the youngest pupils.

To class C the "Schoolmasters' Yearbook" assigns 24,638 pupils, of whom 16,928 are at schools which take pupils under the age of twelve, and 7710 at schools which have no pupils under twelve. The larger number we will divide up in the ratio 1 : 4 : 1. The smaller we will divide on the supposition that there are two pupils under sixteen for every one over that age.

To calculate class D we will compare with the totals of classes A and B. Here Mr. Sadler's reports on Liverpool, Newcastle-on-Tyne, Exeter, Essex, Hampshire, and Derbyshire, a representative list, will give us a standard. This standard is:—

	Under 12	Between 12 and 16	Over 16
Classes A and B	100	100	100
Class D	336	52	41

We promised to show where the Bürgerschüler were. Here they are, in non-recognised schools, which are probably primary in character, and perhaps not efficient at that, yet aping the respectability of a secondary school.

Our total for boys is thus:—

	Under 12	Between 12 and 16	Over 16
Classes A and B	16,084	49,829	5,478
Class C_1	2,821	11,286	2,821
Class C_2	—	5,140	2,570
Class D	54,042	25,911	2,246
Pupil-teachers at schools	—	60	4,685
Total	72,947	92,226	17,800

Or, if we take the population of England as 32,000,000, there are in secondary schools

2·28 boys, per 1000 inhabitants, under 12
2·88 ,, ,, ,, ,, between 12 and 16
0·56 ,, ,, ,, ,, over 16.

And, it should be noted, 26 per cent. of those over sixteen are preparing for work as teachers in primary schools.

A similar calculation could be made for girls; but it would be much harder to work out. If the proportion of five boys to four girls be taken, an error will be made for older girls, as many girls remain at school from want of a fixed occupation, and in many cases the secondary school has still to perform for women the functions of a university.

If we take the number of boys in primary schools in England as 2,800,000, these figures give, for every 100 boys in primary schools, 6·53 in secondary schools, of whom 3·93 are more than twelve years of age.

Against this we may set the following:—

		Higher Grade	Age	Secondary	Age
Basel Town	Boys	54·7	(10–14)	45·3	(10–18)
	Girls	57·4	(10–14)	28·2	(10–18)
Mannheim	Boys	20·5	(8–14)	24·2	(10–19)
	Girls	21·6	(8–14)	9·1	(10–19)
Zürich Canton	Boys	17·0	(12–15)	2·04 5·24	(12–15) (15–18)
	Girls	13·6	(12–15)	1·91	(15–18)
Boston, U.S.A.	Boys and Girls	19·43	(14–19)		
Württemberg	Boys	12·85	(8–14), 2·69 (14–18)		

The figures for girls in Zürich apply only to pupils in public secondary schools. Whatever exceptionally favourable circumstances may be put forward in these cases, compulsory military service or social precedence, taken as a whole they show that England is far in arrear.

It is possible, though in some cases difficult, to construct a table giving the number of secondary pupils in various areas. If we take the figures for Prussia in the "Statesman's Year-book," 1908, we get, for boys and girls in public and private schools:—

8·28 pupils per 1000 inhabitants in secondary schools.
4·51 pupils per 1000 inhabitants in Mittelschulen.

The Mittelschulen may, for social distinction, rank as intermediate, but many of them would be recognised by us as secondary schools.

Other figures for recent years which may be quoted are, per 1000 inhabitants:—

	Boys	Girls	Boys and Girls
U.S.A.	—	—	10·61
Boston, (14–19)	12·37	12·67	25·04
Connecticut (13–19)	—	—	12·67
Maine (13–19)	—	—	18·94
Massachusetts (13–19)	—	—	17·26
Germany—			
Cologne	8·7	4·7	13·4
Hamburg	11·4	11·7	23·1
Mannheim (10–18)	14·56	5·52	20·08
Munich (10–15) (16–18)	11·0 2·26	7·20	20·45
Switzerland—			
Confederation:			
Age 12–15 (Higher Grade)	7·31	6·01	13·32
Age 12–19 (Secondary)	—	—	7·4
Basel Town:			
Age 10–14	8·71	8·01	16·72
Age 14–18	5·00	3·43	8·43

Zürich Canton :			
Age 12–15	11·61	9·63	21·24
Age 12–19	4·03	2·22	6·25

The foregoing statistics may be compared with those subjoined :—

Birkenhead	6·59	8·72	15·31
Derbyshire	3·53	1·54	5·07
Essex	6·11	5·76	11·87
Exeter	11·14	13·73	24·87
Hampshire	6·85	3·88	10·73
Huddersfield	3·99	3·46	7·45
Liverpool	4·14	3·70	7·84
Newcastle-on-Tyne	6·79	5·88	12·67
Shropshire	5·9	5·6	11·5

It will thus be seen that in education we are not yet up to a one-Power standard.

If, however, we take Edinburgh, where a representative committee has been studying the subject, we find from the committee's figures :—

	Under 12	Age 12 to 15	Over 15
Higher Grade	0·3	5·40	1·12
Secondary	6·36	6·28	3·84

being 6·82 per 1000 inhabitants for higher-grade schools and 16·48 for secondary schools. These figures are for boys and girls, and only three private schools are included.

England has no reason to despair. There is sufficient evidence to show that progress is being made. The West Riding County Council has the following record per 1000 inhabitants :—

	1903–4	1904–5	1905–6	1906–7	1907–8	1908–9
Boys	1·5	1·7	1·9	2·1	2·3	2·4
Girls	0·7	1·3	1·6	1·9	2·2	2·3
Total	2·2	3·0	3·5	4·0	4·5	4·7

where, again, the number of girls has greatly increased, a notable augury for the home of the future.

In the West Riding a large number of pupils go to schools in county boroughs; this may account for the slower increase in the figures for boys. If allowance be made for them and for other variations, the average becomes at least 6·2 per 1000, promising, but not yet sufficient.

Statistics relating to university education are liable to uncertainty, on account of the presence of the foreign or colonial student. Thus in Switzerland the chief problem of university education is to exclude the Russian undesirable without offending democratic sentiment. The foreigner who attends a German university does so from belief in its efficiency. At home let us assume that what we gain by the presence of the non-Britisher we lose by emigration to the Continent.

The "Statesman's Year-book" for 1908 gives the following figures for the United Kingdom in 1907 :—

Oxford and Cambridge	7205
Durham	926
London, including School of Economics	7141
University Colleges	3081
Birmingham, Leeds, Liverpool, Manchester, Sheffield	4685
Scotch Universities	7579
Wales	1301
Ireland	2066

a total of 33,984, or about 7·8 per 10,000 inhabitants.

In No. 591 of Diplomatic and Consular Reports, Dr. Rose gives the following figures per 10,000 males in Germany :—

1870	1873	1876	1881	1886	1889	1892	1897	1900
8·89	10·03	11·08	11·73	13·85	14·39	13·87	15·70	16·78

The returns for Switzerland give per 10,000 inhabitants :—

Summer Term 1906—
Natives 9·58 ... Foreigners 12·34 (Men 8·10, Women 4·24)
Winter Term 1906–7—
Natives 10·29 ... Foreigners 12·88 (Men 7·67, Women 5·21)

The figures for German universities given in "Minerva" for 1907 are classified for winter and summer sessions and for matriculated students and Zuhörer. Interpolating for omissions we get :—

	Matriculated students	Total attendance	Ratio
Winter	44,590	51,045	100 : 114·5
Summer	45,052	54,137	100 : 120·2

Or, on the standard of students per 10,000 inhabitants :—

Winter, 8·1 and 9·28. Summer, 8·2 and 9·84.

Further figures bearing on university statistics in Germany will be found on pp. 51 and 57 of No. 591 of Diplomatic and Consular Reports. Estimating for university education on the German basis, we should expect to find 44,370 students in Great Britain and Ireland. We have already enumerated 33,984 at degree-granting universities. The Board of Education accounts for 2,655 at "day technical institutions" in England. Let us add half that number for the rest of the United Kingdom, though 1029 of them are known to be under eighteen years of age. At agricultural and veterinary colleges we know there are 630 students. We thus get a total of 38,597, without any allowance for duplicates.

This is much better than we might expect. The newer universities in the north and the Midlands show the presence of large numbers of people who believe in education of a high standard. There is nothing to compare with the 16,000 or more students at German technical high schools, and little to record in commercial education of a high standard, London always excepted; but there is much promise for the future.

That we have plenty of people willing to be taught is shown by the official returns. Under the heading "Schools of Art" we find :—

	Men	Women
Day classes	1,474	7,631
Evening classes	15,887	11,938

Under "Day Technical Classes" there are 8538 students, and under "Other Classes for Further Instruction" 307,908 men and 207,989 women who qualified for grants, of whom 90,656 were under fifteen and 163,448 between fifteen and eighteen.

In dealing with numbers, the author has endeavoured to put a good complexion on the British position. He has touched but briefly on standards and curricula. He has not overstated the case for the foreigner. The result of all this labour is to leave the impression that the future is promising though the present is deficient. The existence of a crisis in education is being recognised. Local authorities are making schools efficient; parents are availing themselves of the opportunities so created; inspection is telling those most interested whether the work of a school is satisfactory or whether its reputation is only sustained by skilful advertisement. It would be well if the great public schools were to pocket their pride and accept recognition, for that would give a hall-mark of respectability which private schools could not ignore.

Amid all this promise there is much to deplore. The English parent does not whole-heartedly believe in secondary education. Of four boys entering a secondary school, only one completes the curriculum. If the parent can be got to see the value of trained thinking power and to resist the enticement of an immediate wage; if he can appreciate the self-discipline that a steady, self-contained course of education demands; if he will realise the remorselessness of research and ignore the sporting chance of a prize limerick; if he will value the moral forces which have moulded nations and despise the patriotism of the music-hall: then there is still hope for the nation. We can add one-eighth to the number of our university students without creating an academic proletariate. We can almost double the numbers of our secondary schools without being overstocked. We can open a technical university where now a technical institute exists. And if all this is done, we shall neither be financially ruined nor oppressively over-educated. Whilst much remains for the statesman to do, much also remains for the teacher. If parents will insist on knowing what careers are open for their children on leaving a secondary school, the narrow-mindedness of the teacher must give way. If the public will encourage attendance at continuation classes during the day, the employer will attach more value to the work of his employees, and the parent will take care that the primary school does not become a wilderness of book-learning.

The difficulties of making this comparison and the devices which have been employed will be apparent to everyone. Of the conclusions that can be drawn, one at least is incontestable: it is not yet possible to give a definite statistical statement because the materials do not exist. It seems bad economy to suggest further advances until the completion of a national stock-taking.

A. J. Pressland.

THE SOUTH-EASTERN UNION OF SCIENTIFIC SOCIETIES.

Under the presidency of Dr. D. H. Scott, F.R.S., the South-Eastern Union of Scientific Societies held an extremely successful congress at Winchester from Wednesday to Saturday of last week. As Sir Archibald Geikie in his presidential address to the congress at Hastings last year had dealt with the geological history of the Weald, Dr. Scott this year appropriately discoursed on the flora of the Wealden strata. This was a subject of peculiar interest to the Union, inasmuch as many of the most interesting fossil plants of Wealden age have been obtained within the sphere of its activity. The flora was of similar type to that which had prevailed from the beginning of the Mesozoic period, and in so far as seed-bearing plants are concerned consisted chiefly of conifers and cycads. It is believed that the angiosperms did not appear until later Cretaceous times, and their comparatively sudden rise was probably related to the contemporary development of insect life.

With a living specimen of *Cycas revoluta* in front of him, and aided by a fine series of lantern-slides, Dr. Scott described the structure of recent cycads and their relation to the fossil types. Before dealing with cycads, however, he referred to the fact that in the Secondary flora there were many plants more or less related to the Ginkgo, or maiden-hair tree, which at the present day survives as an isolated species, possibly wild on the mountains of western China. It was discovered by Japanese botanists that cycads and Ginkgo alone among living seed-plants were fertilised, like ferns, by motile cells, or spermatozoids. Misled by the resemblance of the leaves of the African cycad Stangeria to the fronds of a fern, the systematic position of Stangeria was at one time misunderstood. It is interesting to learn from Palæozoic botany that a real affinity exists between the cycads and the ferns.

During the Jurassic and Wealden stages of the earth's history cycadaceous plants were so abundant and varied that probably among vascular plants one in every three was a cycad, whereas at the present day the proportion scarcely reaches one in a thousand. Although cycads have now a very limited geographical distribution, they formerly spread over the whole world, and, as their relics testify, must have abounded in what is now the British area. Many of the Mesozoic cycads, notwithstanding the general resemblance of their leaves, differed essentially from the modern types, and where the reproductive organs have been preserved, as in specimens of Bennettites, the fossil fructification is found to be much more complicated than are the simple cones of the living cycads. In America, where abundant material has been discovered, Dr. Wieland, of Yale, has shown that the fructification of many cycad-like plants consisted of true bisexual flowers, comparable in general terms with those of such highly organised modern plants as the magnolias. Recent researches have, indeed, led to the conclusion that the origin of the angiosperms, which are to-day the dominant plants in the world, may perhaps be sought in those cycad-like plants that are so abundantly represented in the Wealden beds. If, as is probable, the flowers were brightly coloured, the fertilisation by insects may have begun among these cycads.

Not without some relation to the subject of the presidential address was a lecture by Mr. R. W. Hooley, of Southampton, on the Age of Reptiles in Hants and the Isle of Wight. The lecturer gave the results of much original investigation in the Wealden beds of the island, resulting in the discovery of many interesting remains. He held strongly to the view that the strata were of deltaic origin.

Another evening lecture was on the prehistoric memorials of Hampshire, by Mr. W. Dale, of Southampton. The lecturer, who is an active archæologist in the field, illustrated his discourse by some fine local antiquities in stone and bronze from his own collection, as well as by a large series of lantern-slides, including many original photographs.

Each morning during the congress two scientific papers were read; these related to botany, entomology, and geology, and most of them were appropriately of a local character. The afternoons were devoted to excursions, which were admirably organised by Mr. N. C. H. Nisbett; and in the evenings, before the lectures, here were receptions by the Mayor and by the headmaster of Winchester College. An excellent temporary museum was arranged at the Guildhall, under Mr. E. W. Swanton, of Sir Jonathan Hutchinson's Museum at Haslemere, the collections including a large series of interesting objects from the Hartley University College, Southampton. The success of the congress was largely due to the energy of the hon. local secretary, Mr. W. Norris, and the hon. general secretary, the Rev. R. Ashington Bullen.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

Cambridge.—Mr. H. F. Newall, F.R.S., fellow of Trinity College, has been elected to the recently founded professorship of astrophysics. Mr. Newall was formerly assistant to the Cavendish professor of physics and demonstrator in experimental physics in the same laboratory, and now holds the position of assistant director of the observatory at Cambridge.

H. E. Durham, King's College, has been approved by the general board of studies for the degree of Doctor in Science.

The general board of studies has appointed Dr. Haddon as reader in ethnology, and Dr. Bromwich as university lecturer in mathematics.

The same board has re-appointed S. Ruhemann as university lecturer in organic chemistry; Dr. Sell and Dr. Fenton as university lecturers in chemistry; Dr. Duckworth as university lecturer in physical anthropology; H. Woods as university lecturer in palæozoology; A. Harker as university lecturer in petrology; and T. S. P. Strangeways as Huddersfield lecturer in special pathology. All these re-appointments are for five years, and date from October 1, 1909. They have also all been confirmed by the special boards connected with the subjects mentioned.

The Vice-Chancellor, Dr. Ridgeway, W. Durnford, C. E. Grant, A. Gray, P. Giles, L. Whibley, and S. C. Cockerell have been nominated a syndicate to consider the administration of the Museum of Classical Archæology, the relation between that museum and the Fitzwilliam Museum, and, in particular, the appointment, duties, and powers of the curator of the Museum of Classical Archæology; the syndicate is empowered to confer with such bodies and persons as it may think fit, and is to report to the Senate before the end of the Lent term, 1910.

It is proposed, the Chancellor, as president of the University Association, having given his approval, that a sum of 1000*l*. from the unassigned portion of the benefaction fund be appropriated towards the cost of the erection of the first block of the new museum of archæology and ethnology, and that the Vice-Chancellor be authorised to accept a tender for the erection of block i. of the new museum of archæology and ethnology provided that the tender does not exceed the sum of 11,000*l*., and that the sums subscribed or guaranteed amount to 12,500*l*. before any contract is signed.

Mr. Francis G. Smart, having made to the University an offer to give the sum of 600*l*. in order to found two prizes to be awarded in each year, one for botany and one for zoology, a Grace will be brought before the Senate